

Claims

I claim:

1. A center beam rail road car, comprising:
a center beam car body mounted on a pair of first and second spaced apart rail car trucks, said body having,
a deck structure,
a central vertical web assembly running along said car, said vertical web assembly extending upwardly of said deck structure, and
a top truss assembly surmounting said vertical web assembly;
said deck structure including first and second end decking portions mounted over said respective first and second trucks, and a medial decking portion lying between said trucks, said medial decking portion being stepped downward relative to said first and second end decking portions; and
said top truss assembly being mounted at a height exceeding AAR Plate C.
2. The center beam rail road car of claim 1 wherein said body has a bunk defined between said deck structure and said top truss, said bunk having a loading height measured between said medial decking portion and said top truss that is at least 165 inches.
3. The center beam rail road car of claim 1, wherein:
said car has a center sill, said deck structure being supported thereby;
said web assembly includes an array of posts extending upwardly from said main sill and has an upper region adjacent to said top truss and a lower region adjacent to said decking structure;
said upper region of said web assembly has at least one longitudinally extending skirt against which lading can be placed.
4. The center beam rail road car of claim 1, wherein:
said car has a center sill, said deck structure being supported thereby;
said web assembly includes an array of posts extending upwardly from said main sill and has a lower region adjacent to said decking structure and an upper region distant therefrom;
said car has an upper beam assembly, said upper beam assembly including said top truss and a beam stem, said top truss being mounted upon said beam stem and said beam stem being mounted to said upper region of said web assembly;

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5 said beam stem includes at least one longitudinally extending skirt against which lading can be placed.

5. The center beam rail road car of claim 1 wherein said medial decking portion lying between said two trucks is at least 28' - 0" long.

6. The center beam rail road car of claim 1 wherein said medial decking portion lying between said two trucks is at least 40' - 0" long.

10 Pub 10 az 7. The center beam rail road car of claim 2 wherein, when loaded with lumber having a density of up to 1740 lbs. per 1000 board feet, has a center of gravity falling within a range whose upper limit is 98 inches above top of rail.

5 8. The center beam car of claim 1 wherein said end decking portions and said medial decking portion each have a load bearing interface, and the load bearing interface of said end decking portions is stepped upwardly relative to the load bearing interface of said medial decking portion a distance of at least 30 inches.

20 9. The center beam rail road car of claim 1 wherein at least one of said end decking portions has staging mounted thereon to define a load bearing interface spaced upwardly of said at least one end decking portion.

10. The center beam rail road car of claim 9 wherein said staging is moveable to a storage position.

25 11. The center beam rail road car of claim 1 wherein:
said car has a pair of side sills extending along said deck structure;
said side sills each have a medial side sill portion mounted to said medial decking portion, said medial side sill portion having a first depth of section;
30 said side sills each have end side sill portions mounted to said end decking structures, said end side sill portions having a second depth of section; and
said first depth of section is less than said second depth of section.

35 12. The center beam rail road car of claim 1 wherein:
said end decking portions include lading support structure mounted thereon defining an end section lading interface; and said end section lading interface lies at a height greater than 42 inches above top of rail.

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The center beam rail road car of claim 1 wherein:
said car has a pair of side sills extending along said deck structure;
said side sills each have a medial side sill portion mounted to said medial decking
portion, said medial side sill portion having a first depth of section;
said side sills each have end side sill portions mounted to said end decking
structures, said end side sill portions having a second depth of section; and
said first depth of section is less than said second depth of section.

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The center beam rail road car of claim 1, wherein:
said car has a pair of side sills extending along said deck structure;
said side sills each have a side sill medial portion mounted to said medial decking
portion, said medial side sill portion having a first depth of section;
said side sills each have side sill end portions mounted to said end decking
structures, said end side sill portions having a second depth of section;
each of said side sills has a knee joining said side sill medial portion to each of
said side sill end portions;
each said knee has a longitudinally inboard flange, a longitudinally outboard
flange, and webbing extending therebetween;
said longitudinally outboard flange has a lower extremity and an upper extremity;
and
said lower extremity lies at a longitudinally inboard station relative to said upper
extremity.

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15. The center beam rail road car of claim 1 wherein:
said car has a pair of side sills extending along said deck structure;
said side sills each have a medial side sill portion mounted to said medial decking
portion;
said side sills each have end side sill portions mounted to said end decking
structures; and
said medial side sill portion has a medial portion side sill web extending from a
first edge to a second edge, said first edge lying at a greater height than
said second edge, and said first edge lying a further distance transversely
outboard than said second edge.

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16. The center beam rail road car of claim 15 wherein said medial decking portion has
at least one lading securement apparatus mounted to said medial portion side sill web.

Part 17
17. A center beam rail road car having a longitudinal centerline and a pair of ends, the rail road car being supported by rail car trucks at either end thereof, said rail road car comprising:

5 a cargo support structure borne between the trucks, upon which cargo can be carried, said cargo support structure including a pair of first and second end structures each mounted over a respective one of said trucks, and a medial structure mounted between said trucks, said medial structure being stepped downwardly relative to said end structures;

10 a web assembly including an array of spaced apart posts mounted at intervals along the longitudinal centerline of the rail road car, said array extending upwardly of said cargo support structure;

15 an upper beam assembly surmounting said web assembly, said upper beam assembly having cantilevered wings extending laterally of said longitudinal centerline; said railroad car having a load limit height defined at a level measured upwardly from said medial structure, and having a nominal load height that is at least as great as the largest integer multiple of 33 inches that is less than the load limit height; and

20 said web assembly having at least one skirt member against which loads placed laterally outward thereof can bear, said skirt member extending between a first height and a second height straddling said nominal load height.

Part 18
18. The center beam rail road car of claim 17 wherein said skirt extends a longitudinal distance corresponding to at least one of said intervals.

25 19. The center beam rail road car of claim 18 wherein said first height is at least as great as said load limit height, and said second height is at least 6 inches below said nominal load height.

Part 20
20. A center beam rail road car, comprising:

30 a center beam car body mounted on a pair of first and second spaced apart rail car trucks, said body having

a deck structure,

a central vertical web assembly running along said car, said vertical web assembly extending upwardly of said deck structure, and

35 a top truss assembly surmounting said vertical web assembly;

said deck structure including first and second end decking portions mounted over said respective first and second trucks said first and second end decking

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portions having structural members presenting respective first and second end portion load bearing interfaces, and a medial decking portion lying between said trucks, said medial decking portion having at least one member presenting a medial load bearing interface; and
5 said medial load bearing interface being stepped downward relative to said first portion load bearing interface through a step distance; and
said step distance being greater than 30 inches.

21. A center beam rail road car, comprising:

10 a center beam car body mounted on a pair of first and second spaced apart rail car trucks, said body having

a deck structure,

a central vertical web assembly running along said car between said ends,
said vertical web assembly extending upwardly of said deck structure,
15 and

a top truss assembly surmounting said vertical web assembly;

said deck structure including

first and second end decking portions mounted over said respective first
and second trucks, and a medial decking portion lying between said
trucks, said medial decking portion being stepped downward
20 relative to said first and second end decking portions; and

at least one of said first and second end deck portions having staging mounted thereupon, said staging having a load support member spaced upwardly of
said at least one first and second end deck portions.

22. A center beam rail road car, comprising:

a center beam car body mounted on a pair of first and second spaced apart rail car trucks, said body having

a deck structure,

30 a central vertical web assembly running along said car between said ends,
said vertical web assembly extending upwardly of said deck structure,

a top truss assembly surmounting said vertical web assembly;

said deck structure including first and second end decking portions mounted over
said respective first and second trucks, and a medial decking portion lying
35 between said trucks, said medial decking portion being stepped
downwardly relative to said first and second end decking portions;

said deck structure having laterally outboard side sills running therealong, each of
said side sills having first and second end decking side sill portions
mounted to respective ones of said first and second end decks, and a
medial side sill portion mounted to said medial deck portion;
5 said medial deck portion being joined to said end deck portions by knee braces;
each of said knee braces having a longitudinally inboard flange adjacent to said
medial portion, said inboard flange extending vertically; and
each of said knee braces having a longitudinally outboard flange, said
longitudinally outboard flange extending from a lower portion thereof
10 lying at a first height relative to top of rail, to an upper portion thereof
lying at a second, greater, height relative to top of rail, and said upper
portion lies further from said longitudinally inboard flange than said lower
portion.

23. A center beam rail road car comprising:

a center beam car body mounted on a pair of first and second spaced apart rail car
trucks, said body having

a deck structure,

a central vertical web assembly running along said car, said vertical
web assembly extending upwardly of said deck structure, and

a top truss assembly surmounting said vertical web assembly;

said deck structure including first and second end decking portions mounted over
said respective first and second trucks, and a medial decking portion lying
between said trucks, said medial decking portion being stepped downward
25 relative to said first and second end decking portions; and

said medial decking portion having a pair of medial decking side sills mounted
therealong, each of said side sills having a web, said web having an upper
edge and a lower edge, said upper edge lying further transversely outboard
than said lower edge.

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24. The center beam rail road car of claim 23 wherein said medial decking side sill
has a load securing device is mounted transversely outboard thereof.

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25. The center beam rail road car of claim 24 wherein at least one of said end decking
portions has an end decking side sill, said end decking side sill has a web, said end
decking side sill web has an upper edge and a lower edge, and said upper edge of
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said end decking side sill web lies further transversely outboard than said inner edge thereof.

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The center beam rail road car of claim 25 wherein said medial decking side sill portion is inclined at a first angle relative to the vertical, and said end decking side sill web is inclined at a second angle relative to the vertical, said first angle being greater than said second angle.

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The center beam rail road car of claim 25 wherein said end decking side sill web has a load securing device mounted transversely outboard thereof.

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The center beam rail road car of claim 23 wherein:
said car has a center sill;
said medial decking portion includes a plurality of cross-bearers extending between said medial decking side sills; and
a load securing device is mounted outboard of said web at a longitudinal station corresponding to the junction of one of said cross-bearers with one of said medial decking side sills.

29. A center beam rail road car comprising:
a center beam car body mounted on a pair of first and second spaced apart rail car trucks, said body having
a deck structure,
a vertical web assembly running along said car, said vertical web assembly extending upwardly of said deck structure, and
a top truss assembly surmounting said vertical web assembly;
said deck structure including first and second end decking portions mounted over said respective first and second trucks, and a medial decking portion lying between said trucks, said medial decking portion being stepped downward relative to said first and second end decking portions;
said medial decking portion having a pair of medial decking side sills mounted therealong;
at least one of said end decking portions having a pair of end decking side sills mounted therealong; and
said end decking side sills having a greater depth of section than said medial decking side sills.

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A center beam rail road car comprising:

a center beam car body mounted on a pair of first and second spaced apart rail car trucks, said body having

a center sill;

a deck structure extending outboard of said center sill,

a vertical web assembly running along said car, said vertical web assembly extending upwardly of said center sill structure, and

a top truss assembly surmounting said vertical web assembly, said top truss lying at a height exceeding AAR Plate C;

said deck structure including first and second end decking portions mounted over said respective first and second trucks, and a medial decking portion lying between said trucks, said medial decking portion being stepped downward relative to said first and second end decking portions; and

at least one of said end decking portions having a cargo support interface lying at a level greater than 42 inches above top of rail.

31. A center beam rail road car comprising:

a center beam car body mounted on a pair of first and second spaced apart rail car trucks, said body having

a center sill having an upper flange and a lower flange;

a deck structure extending outboard of said center sill,

a vertical web assembly running along said car, said vertical web assembly extending upwardly of said center sill structure, and

a top truss assembly surmounting said vertical web assembly, said top truss lying at a height exceeding AAR Plate C;

said deck structure including first and second end decking portions mounted over said respective first and second trucks, and a medial decking portion lying between said trucks, said medial decking portion being stepped downward relative to said first and second end decking portions; and

at least one of said end decking portions having a cargo support interface lying at a greater height than said upper flange of said center sill.